CLAIMS:

1. A method of routing a bit stream representing a voice communication over a telecommunications network, comprising:

5   receiving a bit stream representing a voice communication;

setting at least one bit in the bit stream as a pseudo-tunneling flag;

receiving the bit stream at a network switch;

checking the pseudo-tunneling flag of the bit stream; and

processing the bit stream as a data communication rather than a voice

10   communication if the pseudo-tunneling flag is set.

2. The method of claim 1, further comprising:

receiving a call at a local interface;

determining during a call setup process whether the call is a voice call; and

15   setting a pseudo-tunneling flag in a bit stream of the call if the call is a voice

call.

3. The method of claim 1, wherein the bit stream represents voice packets, each voice packet including at least one vocoder frame of a first vocoder format.

20

4. The method of claim 3, wherein the bit stream is not converted from the first vocoder format to a decompressed format.

20

5. The method of claim 3, further comprising:

   setting at least one bit in each voice packet as pseudo-tunneling flag.

5 6. The method of claim 3, further comprising:

   encapsulating at least one vocoder packet into a routing packet for routing

through a packet switched data network.

   7. The method of claim 1, wherein the step of processing the bit stream comprises

10 routing voice calls through a public switched telephone network if a pseudo-tunneling

flag is not set, and routing voice calls through a data network if the pseudo-tunneling

flag is set.

   8. The method of claim 1, further comprising:

15   receiving the bit stream at a destination local interface;

      checking at least one pseudo-tunneling flag of the bit stream; and

      processing the bit stream as a pseudo-tunneled bit stream if the pseudo-

tunneling flag is set.

20 9. The method of claim 8, wherein a pseudo-tunneled bit stream is processed by a

transcoder which converts the bit stream into a second vocoder format.

10. The method of claim 9, wherein the transcoder is a compressed domain transcoder.

11. The method of claim 10, wherein the compressed domain transcoder converts one of the following vocodor formats: LPC, TDVC, and MELP.

12. The method of claim 1, wherein a pseudo-tunneled voice call is routed through a packet-switched data network using a switched virtual circuit (SVC).

13. The method of claim 12, wherein the SVC lasts only for the duration of the call and is torn down at the completion of the call.

14. The method of claim 1, wherein voice calls and data calls are routed over the same network.

15. The method of claim 14, further comprising padding the bit stream with a padded bit sequence accommodate routing the bit stream across a network.

16. A method of routing a bit stream representing a voice communication over a telecommunications network, comprising:

receiving a bit stream;

checking a pseudo-tunneling flag of the bit stream; and

processing the bit stream as a data communication rather than a voice

communication if the pseudo-tunneling flag is set.

17. The method of claim 16, further comprising:

5   receiving a call at a local interface;

    determining during a call setup process whether the call is a voice call; and

    setting a pseudo-tunneling flag in a bit stream of the call if the call is a voice

call.

10 18. The method of claim 16, wherein the bit stream represents voice packets, each

voice packet including at least one vocoder frame of a first vocoder format.

19. The method of claim 18, wherein the bit stream is not converted from the first

vocoder format to a decompressed format.

15

20. The method of claim 18, further comprising:

    setting at least one bit in each voice packet as pseudo-tunneling flag.

21. The method of claim 18, further comprising:

20   encapsulating at least one vocoder packet into a routing packet for routing

through a packet switched data network; and

    setting a pseudo-tunneling flag in the routing packet.

22. The method of claim 16, wherein the step of processing the bit stream comprises routing voice calls through a public switched telephone network if a pseudo-tunneling flag is not set, and routing voice calls through a data network if the pseudo-tunneling

5   flag is set.

23. The method of claim 16, further comprising:

receiving the bit stream at a destination local interface;

checking at least one pseudo-tunneling flag of the bit stream;

10   processing the bit stream as a pseudo-tunneled bit stream if the pseudo-

tunneling flag is set.

24. The method of claim 23, wherein a pseudo-tunneled bit stream is processed by a transcoder which converts the bit stream into a second vocoder format.

15

25. The method of claim 24, wherein the transcoder is a compressed domain transcoder.

26. The method of claim 16, wherein a pseudo-tunneled voice call is routed through

20   a packet-switched data network using a switched virtual circuit (SVC).

27. The method of claim 26, wherein the SVC lasts only for the duration of the call and is torn down at the completion of the call.

28. The method of claim 16, wherein voice calls and data calls are routed over the same network.

29. The method of claim 28, further comprising padding the bit stream with a padded bit sequence accommodate routing the bit stream across a network.

30. A system for routing a bit stream representing a voice communication over a telecommunications network, comprising:

a source local interface receiving a bit stream representing a voice communication and setting at least one pseudo-tunneling flag in the bit stream;

a network switch receiving the bit stream from the source local interface and processing the bit stream as a data communication if the pseudo-tunneling flag is set.

31. The system of claim 30, wherein the network switch routes the bit stream over a public switched telephone network if the pseudo-tunneling flag is not set, and routes the bit stream over a data network if the pseudo-tunneling flag is set.

32. The system of claim 31, further comprising:

a destination local interface receiving the bit stream from the network switch;

25

transcoding the bit stream if the pseudo-tunneling flag is set.